03500.014833 PATENT APPLICATION



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#16 2/5/03 JC

In re Application of:

Katsuhiko TAKAHASHI, et al.

Application No.: 09/672,769

Filed: September 29, 2000

For: AQUEOUS INK COMPOSITION FOR INK JET, INK CARTRIDGE, RECORDING UNIT, INK JET RECORDING APPARATUS, AND INK JET RECORDING METHOD

Examiner: C. Shosho

Group Art Unit: 1714

January 29, 2003

Commissioner for Patents
Washington, D.C. 20231



REQUEST FOR RECONSIDERATION

Sir:

In response to the Office Action mailed November 8, 2002, Applicants respectfully request reconsideration of the rejections set forth therein in view of the following remarks. For the Examiner's convenience, all the claims currently pending in this application have been reproduced below.

1. (Not Presently Amended) An aqueous ink composition for ink jet comprising:

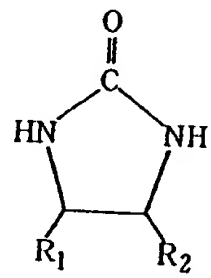
(i) a resin encapsulating a colorant and having a cationic hydrophilic group,

(ii) a self-dispersing pigment having a cationic hydrophilic group bonded to the surface directly or via another atomic group, or a pigment fine particle dispersed with a dispersant having a cationic hydrophilic group;

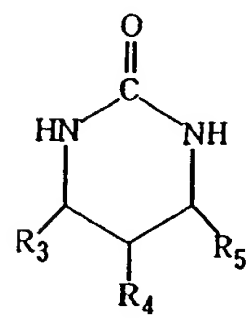
(iii) a polyhydric alcohol; and

(iv) a compound selected from the group consisting of a compound represented by the following general formula (I), a compound represented by the following general formula (II), and mixtures thereof:

General formula (I)




General formula (II)



wherein $R_1$ to $R_5$ are independently each a hydrogen atom, $CH_3$ or $C_2H_5$.

2. (Not Presently Amended) The aqueous ink composition according to claim 1, wherein the pigment of (ii) is a self-dispersing pigment having a cationic hydrophilic group bonded to the surface directly or via another atomic group.

3. (Not Presently Amended) The aqueous ink composition according to claim 1, wherein the colorant of (i) is a pigment.

4. (Not Presently Amended) The aqueous ink composition according to claim 1, wherein the colorant of (i) and the pigment of (ii) are carbon black.

5. (Not Presently Amended) The aqueous ink composition according to claim 1, wherein the compound represented by said general formula (I) is contained in an amount of 5 to 15 wt% based on the total weight of the aqueous ink.

6. (Not Presently Amended) The aqueous ink composition according to claim 1, wherein said polyhydric alcohol is at least one selected from the group consisting of glycerin, propylene glycol, 1,5-pentanediol, 1,2,6-hexanetriol, and hexylene glycol, and the amount of said polyhydric alcohol is in a range of 0.1 to 10 wt%.

7. (Not Presently Amended) The aqueous ink composition according to claim 1, wherein the ink composition is used for ink jet recording.

8. (Not Presently Amended) An ink cartridge comprising an ink container containing an aqueous ink composition for ink jet comprising:

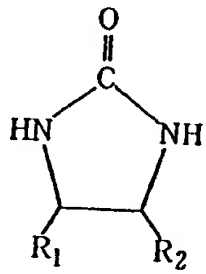
(i) a resin encapsulating a colorant and having a cationic hydrophilic group,

(ii) a self-dispersing pigment having a cationic hydrophilic group bonded to the surface directly or via another atomic group, or a pigment fine particle, dispersed with a dispersant having a cationic hydrophilic group;

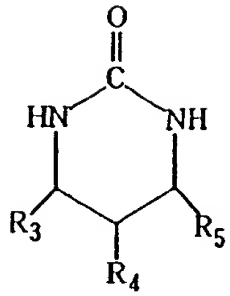
(iii) a polyhydric alcohol; and

(iv) a compound selected from the group consisting of a compound represented by the following general formula (I), a compound represented by the following general formula (II), and mixtures thereof:

General formula (I)



General formula (II)



wherein $R_1$ to $R_5$ are independently each a hydrogen atom, $CH_3$ or $C_2H_5$.

9. (Not Presently Amended) A recording unit comprising an ink container containing an aqueous ink composition for ink jet comprising:

(i) a resin encapsulating a colorant and having a cationic hydrophilic group,

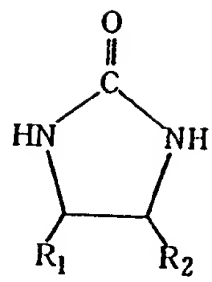
(ii) a self-dispersing pigment having a cationic hydrophilic group bonded to the surface directly or via another atomic group, or a pigment fine particle dispersed with a dispersant having a cationic hydrophilic group;

(iii) a polyhydric alcohol; and

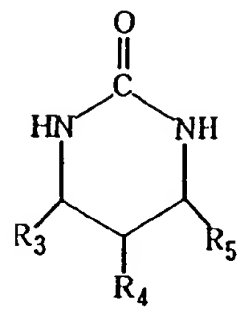
(iv) a compound selected from the group consisting of a compound represented by the following general formula (I), a compound represented by the following general formula (II), and mixtures thereof; and

an ink jet head for ejecting the ink:

General formula (I)



General formula (II)



wherein $R_1$ to $R_5$ are independently each a hydrogen atom, $CH_3$ or $C_2H_5$.

10. (Not Presently Amended) An ink jet recording apparatus comprising an ink container containing an aqueous ink composition for ink jet comprising:

(i) a resin encapsulating a colorant and having a cationic hydrophilic group,

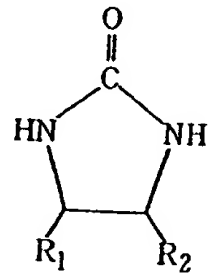
(ii) a self-dispersing pigment having a cationic hydrophilic group bonded to the surface directly or via another atomic group, or a pigment fine particle dispersed with a dispersant having a cationic hydrophilic group;

(iii) a polyhydric alcohol; and

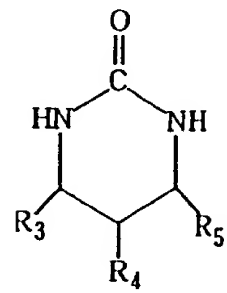
(iv) a compound selected from the group consisting of a compound represented by the following general formula (I), a compound represented by the following general formula (II), and mixtures thereof; and

an ink jet head for ejecting the ink:

General formula (I)




General formula (II)




wherein $R_1$ to $R_5$ are independently each a hydrogen atom, $CH_3$ or $C_2H_5$.

11. (Not Presently Amended) An ink jet recording method comprising a step of applying an aqueous ink composition for ink jet to a recording material by an ink-jet process, said aqueous ink composition comprising:

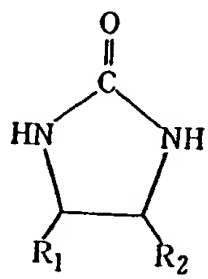
(i) a resin encapsulating a colorant and having a cationic hydrophilic group,

(ii) a self-dispersing pigment having a cationic hydrophilic group bonded to the surface directly or via another atomic group, or a pigment fine particle dispersed with a dispersant having a cationic hydrophilic group;

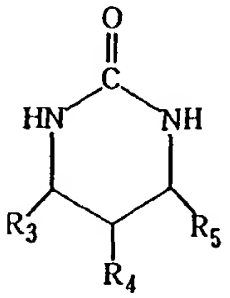
(iii) a polyhydric alcohol; and

(iv) a compound selected from the group consisting of a compound represented by the following general formula (I), a compound represented by the following general formula (II), and mixtures thereof:

General formula (I)



General formula (II)




wherein $R_1$ to $R_5$ are independently each a hydrogen atom, $CH_3$ or $C_2H_5$.

12. (Not Amended) The aqueous ink composition according to claim 1, wherein the polyhydric alcohol is selected from the group consisting of popylene glycol, 1, 5-pentanediol, 1, 2, 6-hexanetriol, and hexlene glycol.

REMARKS

Applicants respectfully request favorable reconsideration and withdrawal of the rejections set forth in the aforementioned Office Action in view of the following remarks.

Claims 1-12 remain pending in the present application. Claims 1 and 8-11 are the independent claims.

Claims 1-12 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 6,031,019 (Tsutsumi, et al.) in view of U.S. Patent No. 6,153,001 (Suzuki, et al.) and either U.S. Patent No. 5,886,065 (Tsang, et al.) or U.S. Patent No. 5,922,118

(Johnson, et al.). Claims 1-12 also stand rejected under 35 U.S.C. § 103(a) as being obvious over Suzuki, et al. in view of Tsutsumi, et al. These rejections are respectfully traversed.

In the Request for Reconsideration filed July 31, 2002, Applicants submitted evidence of unexpected results via a Declaration under 37 C.F.R. §1.132. Specifically, Applicants submitted a Declaration providing the Office with evidence that ethylene urea and urea give significantly different performances with respect to ink storage stability when added to an aqueous ink-jet ink containing a resin encapsulating a colorant and having a cationic hydrophilic group, and a cationic self-dispersing pigment, both dispersed in an aqueous medium. Further, Applicants submitted that this difference in performance is not disclosed or suggested by Tsutsumi, et al. Moreover, Suzuki, et al., treats urea and ethylene urea as equivalents, and does not teach or suggest the superiority of ethylene urea over urea. In view of Suzuki, et al.'s teachings, the superior ink storage stability when using ethylene urea instead of urea would be unexpected to one skilled in the art. Accordingly, the combination of Tsutsumi, et al. and Suzuki, et al. does not teach or suggest the advantageous effect of the present invention, and the present invention is not obvious over Tsutsumi, et al. in view of Suzuki, et al.

In the Advisory Action dated August 14, 2002, the Office took the position that the unexpected results shown by the Declaration were not persuasive because the specification as originally filed did not disclose that ethylene urea affects ink storage stability, citing In re Davies, 177 USPQ 381 (CCPA1973) in support. (Attachment to Advisory Action, paragraph 5).

In the Request for Reconsideration filed September 3, 2002, Applicants asserted that the Office's position, --namely that evidence and arguments directed to advantages not disclosed in the specification can be disregarded, is contrary to applicable precedent and the Office's own procedures as set forth in the Manual of Patent Examining Procedure (M.P.E.P.) both of which require consideration of such evidence and arguments. In support of their position, Applicants cited In re Chu, 66 F.3d 292, 36 USPQ2d 1089 (Fed. Cir. 1995) and various portions of the M.P.E.P.

In the Response to Arguments section of the Office Action dated November 8, 2002, the Office takes the positions that (1) Applicants have not established the relevance of In re Chu to the subject application and that (2) the case cited by the Office in the prior Office Action, In re Davies, 177 USPQ 381 (CCPA 1973), is more relevant than In re Chu. Applicants respectfully disagree and traverse the outstanding rejections based thereon.

Regarding the former position taken by the Office, attention is directed to M.P.E.P. §716.02 (f), which, citing for support In re Chu, 36 USPQ2d at, 1094-95 warns that:

> The totality of the record must be considered when determining whether a claimed invention would have been obvious to one of ordinary skill in the art at the time the invention was made. Therefore, evidence and arguments directed to advantages not disclosed in the specification cannot be disregarded.

(Emphasis added). In In re Chu, the Federal Circuit reversed a Board decision affirming the Office's refusal to consider arguments and evidence concerning the advantages of a

claimed invention when the specification was "virtually silent" about such unexpected results. In reversing the Board, the Federal Circuit concluded that:

> . . . the Board erred in apparently requiring Chu's evidence and arguments responsive to the obviousness rejection to be within his specification in order to be considered.

Id. at 1094. The Federal Circuit went on to state generally that:

> [w]e have found no cases supporting the position that a patent applicant's evidence or arguments traversing a § 103 rejection must be contained within the specification.

Id. at 1095. Thus, it is respectfully submitted that In re Chu is not only relevant to the present case but is controlling and requires the Office's consideration of the 1.132 Declaration.

Still further, it is respectfully submitted that other sections of the M.P.E.P. clearly instruct that the U.S. Patent and Trademark Office should consider all rebuttal arguments and evidence presented by applicants in response to an obviousness rejection. For example, Applicants note that MPEP §2144.08 II.B. instructs that:

> Office personnel should consider all rebuttal arguments and evidence presented by applicants.

That same M.P.E.P. section also recognizes that:

> [r]ebuttal evidence and arguments [of nonobviousness] can be presented in the specification, . . . by counsel, . . . or by way of affidavit or declaration under 37 C.F.R. 1.132....

Id. Thus, Applicants respectfully submit that the evidence of unexpected results presented in the 1.132 Declaration filed July 31, 2002 must be considered by the Office.

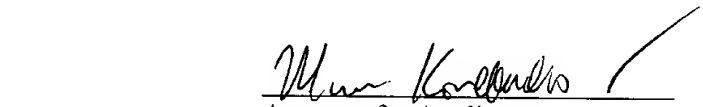
Further, Applicants submit that the present case is readily distinguishable from In re Davies. In that case, the specification indicated that any rubber containing butadiene provided improved properties. Only in the face of a rejection did the applicants abandon claims referring to butadiene homopolymers and attempt to distinguish the use of copolymers. In re Davies, 177 USPQ at 384. Thus, in that case, the alleged unexpected results sought to make a distinction between homopolymers and copolymers that was not made in the specification. In contrast, in the present application, ethylene urea is given as a typical compound represented by the disclosed formula (I), and there is no suggestion that urea is equally suitable. See p. 21, lines 22-27. Thus, the declaration in this case in not trying to make a distinction which was not made in the specification, as was the case in In re Davies.

For the foregoing reasons, Applicants respectfully submit that the Declaration under 37 C.F.R. §1.132 filed July 31, 2002, should be considered by the Office. Further, Applicants submit that the claims patentably define the present invention over the citations of record at least for the reasons set forth in the Request for Reconsideration After Final Rejection filed on that date. Still further, the dependent claims should also be allowable for the same reasons as the base claim and further due to the additional features that they recite. Separate and individual consideration of each of the dependent claims is respectfully requested.

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Official Action and submits that the application is in allowable form. Favorable consideration of the claims and passage to issue of the patent application at the Examiner's earliest convenience earnestly are solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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